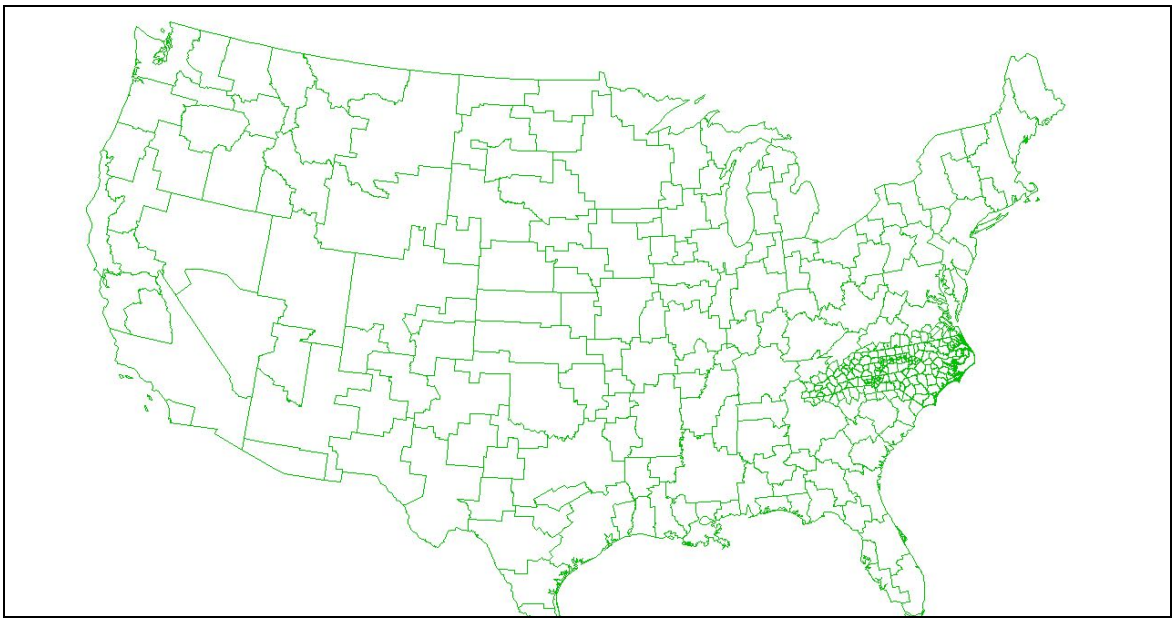

Figure 7 North Carolina Truck Network Model Internal, Buffer and External TAZs

This approach for defining internal TAZs based on census tracts and jurisdictional boundaries is sufficient for this prototype modeling effort. Future refinements may include linkage to Piedmont Crescent MPO models which are also based on census tracts.

Buffer TAZs

Around North Carolina the TAZ geography has a buffer area of counties in neighboring states. The buffer area permits truck drivers to take alternate routes into and out of North Carolina. This allows a smooth transition between the NC study area and the external BEA zones and US network.

Coupled with the external network the buffer area concept is a significant feature of the model because it permits dispersion of external truck traffic into the wider US network. The alternative would be conventional external stations at the North Carolina state border. Such "point source" TAZs would obscure important external truck traffic flow issues that affect North Carolina truck traffic. For example, a seaside or inland freight terminal in Virginia may affect North Carolina truck traffic. Similarly, the effects of significant network changes in neighboring states could be assessed more easily as a result of the buffer concept.

External TAZs

Since the model is a nationwide model concentrating on NC, there are external TAZs at a more aggregate level. The US is divided into 176 TAZs which are Bureau of Economic Analysis (BEA) districts. BEA districts serve as external TAZs to standardize the geography and to link the geography to aggregate census estimates of socioeconomic data such as employment and economic growth.

Having external zones which cover the entire US will improve the flow and distribution of through truck traffic in the North Carolina truck network model. Future refinements to the external TAZs could include smaller sizes and external stations at US ports of entry and border crossings.